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NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

File No: **3BM-CAM2030**

May 27, 2020

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**RE: NWB Replacement Licence No: 3BM-CAM2030**

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Dear Ms. Limousin and Mr. Alam:

Please find attached Licence No: **3BM-CAM2030** (Licence) issued to Hamlet of Cambridge Bay by the Nunavut Water Board (NWB or Board) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee may be in contravention of the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three (3) months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public's interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment; however, a minimum of sixty (60) days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received by interested persons on issues identified. This information is attached for your consideration.<sup>1</sup>

Sincerely,

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Lootie Toomasie  
Nunavut Water Board  
Chair

LT/as/ri

Enclosure:   Licence No: **3BM-CAM2030**  
                  Comments – CIRNA and DFO

Cc:     Kitikmeot Distribution List

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<sup>1</sup> Crown-Indigenous Relations and Northern Affairs (CIRNA), March 17, 2020 and Fisheries and Oceans Canada (DFO), March 16, 2020

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## DECISION

### LICENCE NUMBER: 3BM-CAM2030

This is the decision of the Nunavut Water Board (NWB) with respect to a complete application received on February 06, 2020 for the renewal of a Water Licence made by:

#### HAMLET OF CAMBRIDGE BAY

to allow for the use of water and deposit of waste during municipal activities by the Hamlet of Cambridge Bay located within the Kitikmeot Region, Nunavut, generally located at the geographical coordinates as follows:

Latitude: 69°7'1" N

Longitude: 105°03'15"W

## DECISION

After having been satisfied that the application is outside the area with an applicable regional Land Use Plan, and exempt from the requirement for screening by the Nunavut Impact Review Board (NIRB) under section 12.4.3 of the *Nunavut Agreement* as per Nunavut Planning Commission (NPC) February 20, 2020<sup>2</sup>, the NWB decided that the application could proceed through the regulatory process. In accordance with s. 55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (Act)* and Article 13 of the *Nunavut Agreement*, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *Nunavut Agreement* and of the *Act*, waived the requirement to hold a public hearing, and determined that:

**Licence No. 3BM-CAM1520 be replaced by Licence No. 3BM-CAM2030 subject to the terms and conditions contained therein. (Motion #: 2020-B1-011)**

Signed this 27<sup>th</sup> day of May, 2020 at Gjoa Haven, NU.

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Lootie Toomasie  
Nunavut Water Board, Chair

LT/as/ri

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<sup>2</sup> Nunavut Planning Commission (NPC) Conformity Determination, February 20, 2020



## I. BACKGROUND

The Hamlet of Cambridge Bay (Hamlet or Licensee) is located on Dease Strait between the Queen Maud Gulf and Coronation Gulf area, in the Kitikmeot Region, Nunavut. The Hamlet is situated in a zone of continuous permafrost and experiences temperatures ranging from approximately -35° to 12° Celsius.

The Hamlet is responsible for providing municipal services to its estimated 1,619 (2016) residents, including potable water supply, sewage treatment, and solid waste management, partly in the context of a water licence issued by the NWB to the Hamlet. In April 2020, Licence No. 3BM-CAM1520, the most recent water licence issued by the NWB to the Hamlet, expired. Shortly prior to the expiry of the Licence, the Hamlet had applied to the NWB for a renewed licence to continue to undertake the same types of Water use and Waste deposit activities as contained in the scope of the expired licence.

## II. PROCEDURAL HISTORY

On **February 05, 2020**, the Hamlet of Cambridge Bay submitted a renewal Water Licence Application (Application). The following documents were submitted by the applicant:

- Hamlet Authorization Letter
- Cover Letter
- Water Licence Application
- Inuinnaqtun and English Summaries
- Project Description
- Water Usage Per Capita Analysis
- Waste Management Improvements Summary
- Map of recommended snow fence location

The NPC conformity determination under *Nunavut Planning and Project Assessment Act* (NuPPAA) was received on February 20, 2020.

On **February 25, 2020**, the NWB concluded that the Application generally met the requirements of section 48(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA or Act) and forwarded notice of the Application to interested parties. All parties were invited to make representations to the NWB within twenty-one (21) days by **March 17, 2020**. Before the deadline for comments elapsed, submissions were received from Crown Indigenous Relations and Northern Affairs (CIRNA) and Department of Fisheries and Ocean (DFO) Canada. The Applicant's responses to comments from CIRNA and DFO were received on April 24, 2020 and April 28, 2020, respectively.

The NWB has placed in its Public Registry copies of the Application and all comments received from interveners. This information can be accessed on the NWB's FTP site using the following link:

<ftp://ftp.nwb-oen.ca/registry/3%20MUNICIPAL/3B/3BM%20-%20Municipality/3BM-CAM2030/>

### **III. FILE HISTORY**

According to information included on the NWB's FTP site, two licences have been issued by the Northwest Territories Water Board (NWTWB) and two licences and one amendment have been issued by the Nunavut Water Board (NWB) to the Hamlet of Cambridge Bay in the past for its Municipal undertaking.

#### Licences Issued by the Northwest Territories Water Board

- Type "B" Licence N4L4-1532 was issued to the Hamlet of Cambridge Bay on July 1, 1988 and expired on June 30, 1995. The licence allowed for the deposit of waste and the use of 70, 000 cubic metres of water per year for a Municipal undertaking; and
- Type "B" renewal Licence N4L3-1532 was issued on August 1, 1995 with an expiry date of July 31, 2000. The renewed licence allowed for the deposit of waste and use of 70,000 cubic metres of water per year in support of a Municipal undertaking.

#### Licences Issued by the Nunavut Water Board

- Licence, NWB3CAM0207, was issued to the Hamlet of Cambridge Bay on September 1, 2002 with an expiry date of August 31, 2007. The licence allowed for the use of 70,000 cubic metres of water annually and the deposit of waste in support of a Municipal undertaking;
- Licence NWB3CAM0207 was amended on February 16, 2005, to allow for remediation of petroleum impacted soil at a Hydrocarbon – Impacted Soil Landfarm Treatment Facility; and
- Licence NWB3CAM0207 was renewed as 3BM-CAM0914 on April 30, 2009, and it expired on March 31, 2014. The licence allowed for the use of 88, 000 cubic metres of water annually and the deposit of waste in support of a Municipal undertaking.
- Licence 3BM-CAM0914 expired on March 31, 2014 and was replaced by 3BM-CAM1520 on April 10, 2015. The licence allowed for the use of 86,200 cubic metres of water annually and the deposit of waste in support of a Municipal undertaking. This licence expires on April 09, 2020.

#### IV. GENERAL CONSIDERATIONS

The following sections provide background information relevant to the terms and conditions included in this Licence, in the context of submissions received and/or the Board's rationale.

##### Term of the Licence

In accordance with s. 45 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA or Act), the NWB may issue a licence for a term not exceeding twenty-five (25) years. In determining an appropriate term for a renewal licence, the Board generally takes into consideration several factors including interveners' comments, the Licensee's compliance history, as well as the rationale contained in the Application.

The Licensee requested in its Application, a ten (10) year term for the licence. CIRNA in their submissions stated that they support the term requested for the renewal licence. The Board, in examining the compliance history of the licensee, felt encouraged by recent progress made in providing required/outstanding documents for the undertaking. The Board has therefore granted the term requested by the Licensee. In so doing, the Board believes and expects that the **ten-year term** will provide the Licensee with significant opportunities to consistently abide by the terms and conditions in the Licence over time and provide ongoing compliance record prior to a need for renewal.

##### Annual Reports

Under Part B, Item 1 of the Licence, the Licensee is required to submit Annual Reports for the purpose of ensuring that the NWB has an accurate annual update of municipal activities related to Water use and Waste disposal during each calendar year. This information is maintained on the Public Registry and is available to interested parties upon request. A "Standardized Form for Annual Reporting" is to be used by the Licensee and is available from the NWB file transfer protocol (FTP) site under the Public Registry link at the NWB Website:

<ftp://ftp.nwb-oen.ca/other documents/Standardized Forms/>

##### Water Supply Facility

The Hamlet obtains its freshwater supply from Water Lake, which is located approximately 1.5 kilometers north of the community. The modified water supply facilities (as referred in currently expired licence) have been in operation since March 31, 2017 and the new intake pump house since March, 2015. High pressure line has direct feed into CHARS facility, schools, Helen Maksagak Centre (GN office) and Health Centre. All other residential and commercial buildings have truck supply from treatment plant. Water volume at the water lake estimated minimum 650,000 m<sup>3</sup> (in winter freeze up) to 1,765,000 m<sup>3</sup> (summer) which confirms enough quantities

from the water source to meet the requested water use amount of 94,000 m<sup>3</sup> annually. A secondary water source also has been identified at the upstream of Water Lake in case of an emergency.

The old intake pump house and related structures on the shores of Water Lake have been decommissioned.

### Sewage Disposal Facility

The sewage disposal facility consists of a three pond lagoon system with a total capacity of 190,000 m<sup>3</sup>. Raw sewage generated by the community is collected by trucks and discharged into the primary cell of the lagoon system for treatment. Treated sewage from the primary cell flows into the secondary cell via a berm and then onto other components of the lagoon system before eventually being released, reaching the ocean.

Sewage treatment in the retention cell is causing the pH to increase for some samples. pH is within criteria at CAM-3 in the sewage lagoon and above pH 9.0 at CAM-5, when leaving the retention cell for the same dates.

The sewage and solid waste facilities are located close to each other. During spring snow melt, the solid waste facility gets flooded by the run-off and that water is pumped into the sewage lagoon. Additionally, surface water draining from the landfill is directed via a ditch to the wetland that also receives treated sewage from the retention lagoon. This is causing elevated metal concentrations at the final discharge point CAM-6. High concentrations of Iron and Copper have been detected

Crown-Indigenous Relations and Northern Affairs (CIRNA) in their technical review of the application, have recommended the following:

1. The licensee explore options to reduce pH of the retention cell effluent to meet licence discharge criteria;
2. The licensee explore options to reduce metal concentrations in landfill contact water; and
3. Discharge criteria be re-considered to include metal concentrations if applicable, since the effluent tested is in part from a landfill.

The NWB agrees with CIRNA recommendations regarding exploring options to reduce metal concentrations in landfill contact water, and requires Applicant to investigate these options and provide a report for Board review within twelve (12) months of issuance of this Licence as per Part D, Item 12. Based on the results of this study the Board may consider inclusion of additional parameters as Effluent discharge criteria.



## Solid Waste Disposal Facility

The Solid Waste Disposal Facility is located 0.8 kilometers north-east of the Hamlet. The facility was upgraded in 2012 and includes a primary fenced area of approximately 41,000 m<sup>2</sup> used for managing municipal solid waste generated by the community. A secondary unfenced area, of approximately 20,000 m<sup>2</sup> is used to manage bulky waste and metals such as scrap vehicle, appliances, tires and other materials. Hazardous Waste generated by the community such as batteries, paint, fluorescent/halogen bulbs and more, are stored in secure boxes until shipped to facilities in southern Canada.

Drainage from the primary site of the Solid Waste Disposal Facility is directed by means of a shallow ditch to a basin located north of the sewage lagoon. However, Drainage from the secondary area is directed towards the wetland located downstream of the sewage lagoon. Terms and conditions related to effluent/runoff associated with the Solid Waste Disposal Facility are included under Part D in the Licence.

## Operation & Maintenance Plans

According to Part F, Item 5 and 6, of the currently expired licence, the Licensee was required to submit an Operation & Maintenance (O&M) Manual for the Water Supply Facility within 90 days of the issuance of the Licence. This manual was supposed to include a schedule for daily water use volumes. The O&M Manual was received on February 04, 2020 and did not contain any reference to a schedule for recording daily water use volumes.

Crown-Indigenous Relations and Northern Affairs (CIRNA) provided their technical review comments on the O&M plans and recommended the following:

1. The proponent modify the Operation and Maintenance Manual to include instructions on where and how to record daily water use volumes, as required by the water licence.
2. The proponent provide as-built drawings stamped and signed by an Engineer for the project components drawn by Stantec.
3. Request to rearrange the document for ease of understanding and to provide Appendices C to H which are missing from the document.

The NWB agrees with CIRNA's recommendations and has included conditions in Part F of this Licence to submit an updated version of the Operation & Maintenance (O&M) Manual for the Water Supply Facility within 90 days of the issuance of the Licence. The updated version will contain

### Sludge Management Plan

Details contained in the Sewage Lagoon Operations & Maintenance Manual indicate that the 50m X 50m pad has been created south of the primary lagoon cell for the drying of sludge that may be removed from the primary lagoon during de-sludging operations, typically carried out every 8 to 12 years. While the Licensee has indicated that de-sludging activities are unlikely to occur during the lifetime of the Sewage Disposal Facility, conditions have been included in the Licence, under Part F, Item 6, requiring the Licensee to submit a sludge management plan, if the Licensee is required to de-sludge the facility at some point in the future.

### Abandonment and Restoration Plan

General terms and conditions have been included under Part G in the Licence, requiring the Licensee to submit an Abandonment and Restoration (A&R) Plan at least six (6) months prior to abandoning any facility under the scope of this replacement Licence.

### Monitoring Plan

Part H of the Licence details the environmental monitoring requirements. Requirements are similar to the previous Licence. The Board notes that additional discharge criteria for metals may be considered at the final discharge location (CAM-6) based on the results of study to reduce metal concentrations that the Licensee is required to provide within twelve (12) months as discussed above.

The Licensee has included details related to how it intends to monitor relevant facilities associated with its operations in its Quality Assurance and Quality Control Plan and respective operations and maintenance plans/manual. The Licensee is required to seek approval and/or conformation from the Board prior to making any changes to the monitoring program.

It should also be noted that additional sampling may be required upon request by the Board or the Inspector.



# NUNAVUT WATER BOARD

## WATER LICENCE

**Licence No: 3BM-CAM2030**

Pursuant to the Nunavut Waters and Nunavut Surface Rights Tribunal Act and the Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

### **HAMLET OF CAMBRIDGE BAY**

(Licensee)

**P.O. BOX 16 CAMBRIDGE BAY NUNAVUT X0B 0C0**

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of waste for a period subject to restrictions and conditions contained within this Licence renewal:

Licence Number/Type: **3BM-CAM2030 TYPE "B"**

Water Management Area: **SOUTHERN VICTORIA ISLAND WATERSHED (38)**

Location: **KITIKMEOT REGION, NUNAVUT**

Classification: **MUNICIPAL UNDERTAKING**

Purpose: **DIRECT USE OF WATER AND DEPOSIT OF WASTE**

Quantity of Water use not to Exceed: **94,000 CUBIC METRES *PER ANNUM* AT MAXIMUM RATE OF 299 CUBIC METRES *PER DAY***

Effective Date: **MAY 27, 2020**

Expiry of Licence: **MAY 26, 2030**

This Licence renewal, issued and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.

**Lootie Toomasie,  
Nunavut Water Board, Chair**

## **PART A: SCOPE, DEFINITIONS AND ENFORCEMENT**

### **1. Scope**

This Licence allows for the use of Water and the deposit of Waste for a Municipal undertaking classified as per Schedule 1 of the *Regulations* at the Hamlet of Cambridge Bay, located within the Kitikmeot Region of Nunavut of Region, Nunavut.

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing *Regulations* are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and
- b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

### **2. Definitions**

“**Act**” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Addendum**” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report;

“**Amendment**” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“**Appurtenant Undertaking**” means an undertaking in relation to which a use of water or a deposit of waste is permitted by a licence issued by the Board;

“**Board**” means the Nunavut Water Board established under the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Effluent**” means treated or untreated liquid waste material that is discharged into the environment from a structure such as a settling pond, lagoon (including wetland), landfill or a treatment plant;

“**Engineer**” means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2d*

the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

**“Final Discharge Point”** in respect of an effluent means an identifiable discharge point of a facility beyond which the operator of the facility no longer exercises control over the quality of the Effluent;

**“Freeboard”** means the vertical distance between water line and the designed maximum operating height on the crest of a dam or dyke’s upstream slope;

**“Geotechnical Engineer”** means a professional engineer registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization with the engineering properties of earth materials in dealing with man-made structures and earthworks that will be built on a site. These can include shallow and deep foundations, retaining walls, dams, and embankments;

**“Grab Sample”** means an undiluted quantity of material collected at a particular time and place that may be representative of the total substance being sampled at the time and place it was collected;

**“High Water Mark”** means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

**“Inspector”** means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

**“Licensee”** means the holder of this Licence;

**“Modification”** means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

**“Monitoring Program”** means a monitoring program established to collect data on surface water and groundwater quality to assess impacts to the freshwater aquatic environment of an appurtenant undertaking;

**“Nunavut Agreement”** means the *“Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada”*, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

**“Regulations”** means the *Nunavut Waters Regulations SOR/2013-69 18th April, 2013*;

**“Retention Sewage Lagoon”** is the secondary cell of the Sewage Disposal Facility and is identified within the drawings submission dated October 3, 2008, “Cambridge Bay Sewage

and Solid Waste Facilities”, specifically on Drawing No. C-01, Process Summary and drawing C-04, Sewage Lagoon Improvement Plan;

“**Secondary Containment**” means an impermeable structure, external to and separate from primary containment, which prevents unplanned spills of hazardous materials and provides a minimum capacity of 110% of the original vessel. Where multiple vessels are stored within the containment, it must provide a minimum capacity equal to the sum of the largest vessel and 10% of the aggregate volume of all other vessels located in the containment. This structure shall also provide containment and control of hoses and nozzles;

“**Sewage**” means all toilet wastes and greywater;

“**Sewage Disposal Facility**” refers to the upgrade Sewage Disposal Facility that comprises the Primary Sewage Lagoon and Retention Sewage Lagoon as identified on Drawing No. C-01, C-02 and C-04, Government of Nunavut Cambridge Bay Waste Facilities, October 3, 2008;

“**Solid Waste Disposal Facility**” referred to the up-graded Solid Waste Disposal Facility designated for the disposal of solid waste, as identified on Drawing No. C-01, C-02 and C-04, Government of Nunavut Cambridge Bay Waste Facilities, October 3, 2008 and modified as described in the renewal application dated August 3, 2007 and supplementary documents submitted with that application;

“**Spill Contingency Plan**” means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

“**Sump or Sumps**” A structure or depression that collects, controls, and filters liquid waste before it is released to the environment. This structure should be designed to prevent erosion while allowing percolation of liquid waste;

“**Waste**” means, as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

“**Waste Disposal Facilities**” means all facilities designated for the disposal of waste, and includes the Sewage Disposal Facilities and Solid Waste Disposal Facilities (including Bulky metal area), as described in the previous Application for Water Licence renewal filed by the Applicant on May 27, 2014;

“**Water**” or “**Waters**” means waters as defined in section 4 of the *Act*; and

**“Water Supply Facility”** refers to the upgraded facility including the dual-intake structure, new pump house, storage tank and appurtenances as described by the applicant in its Modification request received by the Board March 30, 2012.

### **3. Enforcement**

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

## **PART B: GENERAL CONDITIONS**

1. The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31 of the year following the calendar year being reported, containing the following information:
  - a. Tabular summaries of all data generated under the “Monitoring Program”;
  - b. Monthly and annual quantities in cubic metres of fresh Water obtained at the Water Supply Facility and/or for all purposes under the licence;
  - c. Monthly and annual quantities in cubic metres of all Waste discharged;
  - d. A summary of any open burning undertaken under Part D, Item 10, including quantity and details of the waste being burned, along with photographic evidence of site cleanup;
  - e. Summary of modifications and/or major maintenance work carried out on the Water Supply Facility and Waste Disposal Facilities, including all associated structures;
  - f. A list of unauthorized discharges and summary of follow-up action taken;
  - g. A summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
  - h. Any Addendum with updates or revisions for manuals and plans (including *Operations and Maintenance Manuals/Plans*) as required by changes in operation and/or technology;
  - i. A summary of any studies or reports requested by the Board that relate to the use of Water and Waste disposal or restoration, and a brief description of any future studies planned; and
  - j. Any other details on Water or Waste deposit requested by the Board by November 1 of the year being reported.
2. The Licensee shall comply with the “Monitoring Program” described in this Licence, and

any amendments to the “Monitoring Program” as may be made from time to time, pursuant to the conditions of this Licence.

3. The “Monitoring Program” and compliance dates specified in the Licence may be modified at the discretion of the Board in writing.
4. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
5. The Licensee shall install flow meters or other such devices, or implement other such methods as approved by the Board in writing, for the measuring of water volumes as required under Part H.
6. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.
7. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
8. The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.
9. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and condition imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
10. The Licensee shall ensure a copy of this Licence is maintained at the Municipal Office at all times. Any communication with respect to this Licence and any notice provided to an Inspector, shall be made in writing to the attention of:

(a) **Manager of Licensing:**  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0  
Telephone: (867) 360-6338  
Fax: (867) 360-6369  
Email: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

(b) **Inspector Contact:**  
Manager of Field Operations, CIRNA



Nunavut District, Nunavut Region  
P.O. Box 100  
Iqaluit, NU X0A 0H0  
Telephone: (867) 975-4295  
Fax: (867) 979-6445

11. The Licensee shall submit one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut and Inuinnaqtun.
12. The Licensee shall ensure that all document(s) and correspondence submitted by the Licensee to the Board are received and acknowledged by the Manager of Licensing.
13. This Licence is not assignable except as provided in Section 44 of the Act.

**PART C: CONDITIONS APPLYING TO WATER USE**

1. The Licensee shall obtain all fresh water processed by the Water Supply Facility and for all purposes under this Licence from Water Lake.
2. The annual quantity of Water used for all purposes shall not exceed ninety-four thousand (94,000) cubic metres, at a maximum daily withdrawal rate that shall not exceed two hundred and ninety-nine (299) cubic metres.
3. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen.
4. The Licensee shall not remove any material from below the ordinary High Water Mark of any water body unless otherwise approved by the Board in writing.
5. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
6. The Licensee shall implement sediment and erosion control measures, prior to and during operations, to prevent entry of sediment into Water.
7. The Licensee shall submit to the Board for approval in writing, at least thirty (30) days prior to the use of Water in sufficient volume that the source water body may be drawn down, the following information: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures.

**PART D: CONDITIONS APPLYING TO WASTE DISPOSAL**

1. The Licensee shall direct all Sewage generated by its undertaking to the Sewage Disposal Facility included under the scope of this licence.
2. The Licensee shall direct Effluent from the Solid Waste Disposal Facility to the Retention Sewage Lagoon as required.
3. The Licensee shall provide a minimum of ten (10) days' notice to an Inspector of the intent to discharge Effluent from the Sewage Disposal Facility.
4. All effluent discharged from the Solid Waste Disposal Facility to the Retention Sewage Lagoon, shall be monitored for conditions under Part H, Item 5.
5. All Effluent discharged from the Sewage Disposal Facility to the Sewage Wetland at Monitoring Program Station CAM-5 shall be measured for the parameters listed under this term and condition. Effluent at the outfall area at Monitoring Program Station CAM-6, shall not exceed the following Effluent quality limits:

Parameter	Maximum Concentration of Any Grab Sample
pH	between 6 and 9
BOD <sub>5</sub>	100 mg/L
Total Suspended Solids	120 mg/L
Fecal Coliforms	1 x 10 <sup>6</sup> CFU/100mL
Oil and grease	No visible sheen

6. The Licensee shall maintain at all times, a freeboard of at least 1.0 metre, or as recommended by a qualified Geotechnical Engineer and as approved by the Board in writing, for all dams, dykes or other structures intended to contain, withhold, divert or retain Water or Waste.
7. The Sewage Disposal Facility shall be maintained and operated in such a manner as to prevent structural failure.
8. The Licensee shall manage all solid Waste generated by its undertaking and/or disposed of at the Solid Waste Disposal Facility in accordance with acceptable standard and practices.
9. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, styrofoam, asbestos or painted wood to prevent the deposition of waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding waters, unless otherwise approved by the Board in writing.
10. The Licensee shall provide a minimum of ten (10) days' notice to an Inspector, of the intent to open-burning municipal waste in accordance with the Government of Nunavut's *Environmental Guideline for the Burning and Incineration of Solid Waste* (Revised 2012), at the designated location at the Solid Waste Disposal Facility, including the details of the

types and quantity of waste to be burned, proposed dates, protocols to be followed, ultimate disposal of residual ash and the person responsible for the activity.

11. The Licensee shall segregate and store all hazardous materials and/or hazardous Waste within the Solid Waste Disposal Facility in such a manner as to prevent the deposit of deleterious substances into any Water, until such a time that the materials have been removed for proper disposal at an approved facility.
12. The Licensee shall, within twelve (12) months of issuance of this Licence, submit to the Board for review, a study report, discussing options for reduction of metal concentrations within the Effluent at Monitoring Program Station CAM-6.

**PART E: CONDITIONS APPLYING TO MODIFICATIONS AND CONSTRUCTION**

1. The Licensee shall submit to the Board for review, for construction design drawings stamped by a qualified Engineer, sixty (60) days prior to the construction of any dams, dykes or structures intended to contain, withhold, divert or retain Water or Waste.
2. The Licensee may, without written approval from the Board, carry out modifications to the Water Supply Facility and Waste Disposal Facilities provided that such modifications are consistent with the terms of this Licence and the following requirements are met:
  - a. the Licensee has notified the Board in writing of such proposed modifications at least sixty (60) days prior to beginning the modifications;
  - b. these modifications do not place the Licensee in contravention of the Licence or the Act;
  - c. the Board has not, during the sixty (60) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
  - d. the Board has not rejected the proposed modifications.
3. Modifications for which all of the conditions referred to in Part E, Item 2, have not been met may be carried out only with written approval from the Board. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.
4. The Licensee shall, within ninety (90) days of completion of Modification or construction of facilities and/or infrastructure associated with the project, submit to the Board for review a Construction Summary Report along with stamped as-built plans and drawings, providing explanation to reflect any deviations from for construction drawings taking into account construction and field decisions and how they may affect the performance of engineered facilities.

5. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
6. The Licensee shall implement and maintain sediment and erosion control measures prior to and during activities carried out under this Part, to prevent the release of sediment and minimize erosion.

**PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE**

1. The Board has approved the Plan entitled “Spills Contingency and Response Plan” submitted on February 04, 2020 as additional information with the application. The Licensee shall, within the next updates, include within the Plan at a minimum a NT-NU Spill Report form.
2. The Board has approved the Plan entitled “Operation & Maintenance Manual, Water Treatment Plant, Cambridge Bay, NU” dated April 08, 2018, submitted on February 04, 2020 as additional information with the application. The Licensee shall, within the 2020 Annual Report, submit to the Board for review, a stand-alone Water Supply Facility Operation and Maintenance (O&M) Manual that addresses all comments received during the review of Application and includes a schedule for recording daily water use volumes requirements as referred to in Part H, Items 1 and 2.
3. The Licensee, shall, within ninety (90) days of issuance of this Licence, submit to the Board for review, as-built report and drawings for the Water Supply Facility that are signed and stamped by an Engineer.
4. The Licensee shall submit to the Board for approval in writing, at least sixty (60) days prior to conducting any desludging operations, a stand-alone Sewage Sludge Management Plan.
5. An inspection of all engineered facilities related to the management of water and waste shall be carried by an Engineer (Civil, Municipal or Geotechnical) annually or before commissioning any facility. The Engineer’s report shall be submitted to the Board within sixty (60) days of the inspection, including a Cover Letter from the Licensee outlining an implementation plan addressing each of the Engineer’s recommendations.
6. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.
7. The Licensee shall, during the term of this Licence, undertake the following activities in addition to any other required action should an unauthorized discharge of waste occur or if such a discharge is foreseeable:
  - a. Employ the appropriate contingency measures as approved under the Spill Contingency Plan for the Hamlet of Cambridge Bay;

- b. Report the incident immediately via the NWT/NU 24-Hour Spill Reporting Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
  - c. Submit to the Inspector, a detailed report on each occurrence, not later than thirty (30) days after initially reporting the event, that provides the necessary information on the location (including the GPS coordinates), initial response action, remediation/clean-up, status of response (ongoing, complete), proposed disposal options for dealing with contaminated materials and preventative measures to be implemented.
8. The Licensee shall, in addition to Part F, Item 7, regardless of the quantity of releases of harmful substances, report to the NWT/NU 24-Hour Spill Line if the release is near or into a Water body.

**PART G: CONDITIONS APPLYING TO ABANDONMENT, RESTORATION AND CLOSURE**

1. The Licensee shall submit to the Board for approval an *Abandonment, Restoration and Closure Plan* at least six (6) months prior to abandoning any facilities or upon submission of the final design drawings for the construction of new facilities to replace existing ones. Where applicable, the Plan shall include information on the following:
- a. water intake facility;
  - b. the water treatment and waste disposal sites and facilities;
  - c. petroleum and chemical storage areas;
  - d. any site affected by waste spills;
  - e. leachate prevention;
  - f. an implementation schedule;
  - g. maps delineating all disturbed areas, and site facilities;
  - h. consideration of altered drainage patterns;
  - i. type and source of cover materials;
  - j. future area use;
  - k. hazardous wastes; and
  - l. a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.

**PART H: CONDITIONS APPLYING TO MONITORING PROGRAM**

1. The Licensee shall maintain Monitoring Program Stations at the following locations:

<b>Monitoring Program Station Identification</b>	<b>Description</b>	<b>Frequency</b>	<b>Status</b>
CAM-1	Raw water supply intake at Water Lake	Monthly, Annually	Active (Volume)
CAM-2	Runoff from the Solid Waste Disposal Facility	N/A	Inactive (Quality)
CAM-3	Effluent or sampling point within the Sewage Lagoon Facility	Based operational needs	(Quality)
CAM-4	Effluent from the eastern-most control pond in the Solid Waste Disposal Facility being discharged to the Retention Sewage Lagoon	Prior to discharge	Active (Volume) (Quality)
CAM-5	Final Discharge Point for effluent from the Retention Sewage Lagoon to the Sewage Wetland	Once at the beginning of discharge; one during the middle of discharge, and once near end of discharge	Active (Volume) (Quality)
CAM-6	Outfall area for the Sewage Wetland	Monthly, During periods of observed flow	Active Volume (Quality)

2. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of water pumped at Monitoring Program Station CAM-1, for all purposes.
3. The Licensee shall measure and record the annual quantities of sewage solids or sludge removed from the Sewage Disposal Facility.
4. The Licensee shall inspect weekly, during the period of May and October, at Monitoring Program Stations, CAM-4, CAM- 5, and CAM-6, for Effluent or water flow in order to fulfill the monitoring requirements of Part D, Item 5 and/or Part H, Item 1. A record of inspections shall be maintained and made available to an Inspector upon request.
5. The Licensee shall sample at Monitoring Program Stations CAM-4, CAM-5, and CAM-6, monthly during periods of observed flow. Samples shall be analyzed for the following

parameters:

Biochemical Oxygen Demand (BOD <sub>5</sub> )	Fecal Coliforms
Total Suspended Solids	pH
Conductivity	Nitrate-Nitrite
Oil and Grease	Magnesium
Calcium	
Sodium	Potassium
Chloride	Sulphate
Total Hardness	Total Alkalinity
Ammonia Nitrogen	Total Zinc
Total Cadmium	Total Iron
Total Cobalt	Total Manganese
Total Chromium	Total Nickel
Total Copper	Total Lead
Total Aluminum	Total Arsenic
Total Mercury	Total Organic Carbon (TOC)*

6. The Licensee shall sample at Monitoring Program Stations CAM-5 and CAM-6, at least once prior to discharge, once during the middle of discharge and once near the completion of discharge event in order to verify compliance with relevant parameters under Part D, Item 5.
7. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board.
8. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
9. The Licensee shall follow the Plan entitled Quality Assurance and Control Plan – Lagoon and Landfill, dated November 2013, that was accepted previously by the Board.
10. The Licensee shall annually review and revise as necessary the Quality Assurance and Quality Control Plan, in Part H, Item 9, and submit any updates to the Board for review along with the relevant approval letter from the accredited laboratory.
11. The Licensee shall measure and record the annual quantities of sewage solids removed from the Sewage Disposal Facility.
12. Additional monitoring stations, sampling and analyses may be requested by an Inspector.
13. The Licensee shall include all of the data and information required by the “Monitoring Program” complete with an interpretation and discussion of the results, in the Licensee’s

Annual Report, as required *per* Part B, Item 1, or as requested by an Inspector.

14. Modifications to the Monitoring Program may be made only upon written approval from the NWB. Requests for changes to the Monitoring Program should be forwarded to the NWB in writing, and should include the justification and appropriate evidence to support the change.